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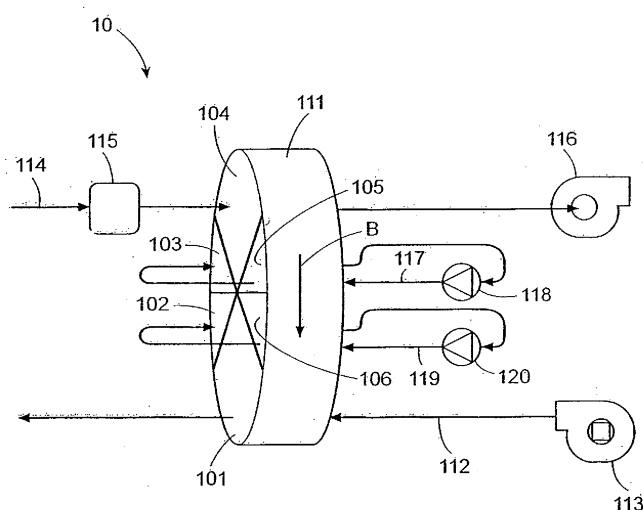
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(54) **Rotary bed sorption system including at least two recycled isolation loops, and methods of designing and operating such a system**

(57) A method of reducing the sorbate concentration of a process fluid stream using a sorption bed system includes the following steps. A mass of a sorbent material is rotated so that, in a cycle of operation, a given volume of the sorbet mass sequentially passes through first, second, third, fourth, fifth, and sixth zones, before returning to the first zone. A process fluid stream is passed through the sorbent mass in the first zone, and a regeneration fluid stream is passed through the sorbent mass in the

fourth zone. A first isolation fluid stream is recycled in a closed loop, independent of the process fluid stream and the regeneration fluid stream, between the sorbent mass in the second zone and in the sixth zone. A second isolation fluid stream, meanwhile, is recycled in a closed loop, independent of the process fluid stream, the generation fluid stream, and the first isolation fluid stream, between the sorbent mass in the third zone and in the fifth zone.

FIG. 2





EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	US 4 729 774 A (COHEN BARRY M [US] ET AL) 8 March 1988 (1988-03-08) * column 1, line 16 - line 19 * * column 2, line 67 - column 3, line 6 * * column 5, line 34 - line 37 * * column 8, line 65 - column 9, line 39 * * figure 15 *	1-15	TECHNICAL FIELDS SEARCHED (IPC)
A	US 4 948 392 A (RUSH WILLIAM F [US]) 14 August 1990 (1990-08-14) * column 1, line 7 - line 17 * * figures 1-4 *	1-15	B01D F24F
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 25 July 2011	Examiner Hackenberg, Stefan
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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25-07-2011

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